

Remarks/Arguments:

The pending claims are 1-20. Claims 1, 2, 10 and 11 have been amended. Claims 19 and 20 have been added. No new matter is introduced therein.

Figure 5 has been objected to because it is not designated as Prior Art. Since a replacement sheet has been provided for Figure 5, applicants request that this objection be withdrawn.

The specification has been amended to provide support for claim 8 in the specification. No new matter is introduced by this amendment to the specification because the subject matter was contained in claim 8 as originally filed.

Claims 1-18 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Applicants' Admitted Prior Art in view of Sugawara et al. (U.S. Patent No. 5,849,424). Claim 1, as amended, recites

surface layers made of metal including tin as a main substance provided on said lead conductors, respectively, said surface layers having thicknesses not greater than 14 μ m.

The Office Action admits that that Applicants' Admitted Prior Art does not disclose surface layers having thicknesses not greater than 14 μ m. The Office Action contends that Sugawara discloses thicknesses of 1-10 μ m. In view of the teachings of Sugawara, the Office Action contends that it would have been obvious to make the thicknesses of the layers shown in applicants' Figure 5 to be not greater than 14 μ m. Applicants respectfully disagree.

The amount of tin used in the Applicants' Admitted Prior Art is different than the amount of tin used in the Sugawara device. This difference is important because the purpose of the tin layer in the Applicants' Admitted Prior Art is different from the purpose of the tin layer in Sugawara. In Applicants' Admitted Prior Art, the purpose of the tin is to allow the plating layer 2a to melt. (page 1, lines 18-21). In Sugawara, the purpose of the tin layer is to increase surface hardness. (col. 2, lines 4-8). To accomplish this purpose, Sugawara uses an alloy in

which copper is the base material and tin is a small amount of the alloy material. (col. 2, lines 11, 14, 17-21). More specifically, Sugawara uses no more than 10 wt % tin. (col. 2, lines, 19, 25, 42, 50-51). In contrast, in Applicants' Admitted Prior Art, the plating layer includes 60 to 65wt.% tin. (page 1, line 14). That is, the amount of tin in Applicants' Admitted Prior Art is much greater than the other alloyed materials.

In other words, Sugawara uses a small amount of tin in a composition where the percentage of tin is substantially less than 50% of the total. In Applicants' Admitted Prior Art, the percentage of tin is substantially more than 50% of the total. The purposes of the tin in each device is different. There is no suggestion in Sugawara to use a tin layer not greater than 14 μ m in a device where tin is the majority element. There is no suggestion in Sugawara to use a tin layer not greater than 14 μ m to allow the plating layer to melt. Sugawara teaches the use of a tin layer of 1-10 μ m thickness and no more than 10wt.%. Therefore, Sugawara would not have made it obvious to provide a surface layer thickness to Applicants' Admitted Prior Art device not greater than 14 μ m. It would not have been obvious because Sugawara uses only a small amount of tin. In contrast, in Applicants' Admitted Prior Art device, more than a majority of the plating layer is tin. The difference between claim 1 and Sugawara has been made clear by reciting that tin is "a main substance" of surface layers. In addition, claim 2 recites that the surface layers are "substantially entirely" made of tin. These amendments are supported at least by page 4, lines 3-16.

Accordingly, claims 1 and 2 are not subject to rejection under 35 U.S.C. § 103(a) as unpatentable over Applicants' Admitted Prior Art in view of Sugawara. Since claims 3-9 depend from amended claim 1, they are also not subject to the same rejection for at least the same reasons. In addition, page 3 of the Office Action contends that Applicants' Admitted Prior Art discloses surface layers made of composition having no orientation. Applicants respectfully disagree. There is no such disclosure in Applicants' Admitted Prior Art. Accordingly, claim 8 is not subject to rejection for this additional reason.

Claim 10 has been amended by changing "conductors" on line 10 to "layers" so that line 10 is consistent with line 9. Claim 10 has also been amended by reciting that the surface layers include tin "as a main substance." Claim 11 has been amended by reciting that the surface layers are "substantially entirely" made of tin. Claims 10 and 11 are not subject to rejection for

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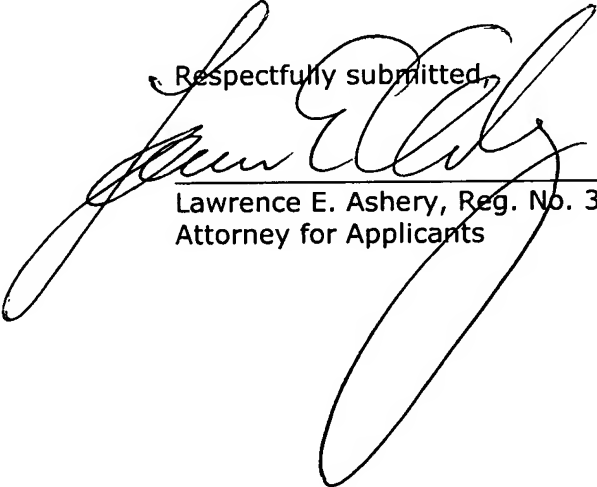
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the same reasons that claims 1 and 2 are not subject to rejection. Since claims 12-18 depend from amended claim 10, they are also not subject to rejection for at least the same reasons.

Claims 19-28 are newly added. They are supported at least by page 4, lines 4-16 of the specification. Since these claims depend from claims 1 and 10, respectively, they are also not subject to the same rejection.

For all of the above reasons, claims 1-20 are now in condition for allowance and applicants solicit their allowance.

Respectfully submitted,


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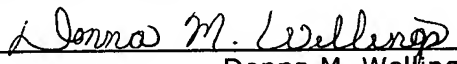
Attachment: Figure 5 (1 sheet)

Dated: April 4, 2005

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